

# **THE NORTH AMERICAN TRUMPETER SWAN STATUS REPORT-1990**

THE TRUMPETER SWAN SOCIETY  
CANADIAN WILDLIFE SERVICE  
U.S. FISH AND WILDLIFE SERVICE

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U.S. Fish and Wildlife Service, Canadian Wildlife Service, and The Trumpeter Swan Society

## Abstract

This report covers the 1990 Trumpeter Swan Survey and compares these results to those of previous surveys. The 1990 Trumpeter Swan Survey was conducted from late summer through mid-winter 1990. Trumpeter swans were inventoried throughout most of their known breeding range and captive locations. In total, 16,590 swans were counted during the survey. The Pacific Coast, Interior, and captive-held population counts reached record high levels. The Rocky Mountain population had mixed results; the Interior Canada subpopulation had the highest-ever count; but the Tri-state subpopulation count was essentially unchanged from the previous surveys. While the total survey effort was the highest expended to date, it was necessary because the range of trumpeter swans has expanded.

## Introduction

Trumpeter swans (*Cygnus buccinator*) were once distributed across much of North America. Accounts from early settlers indicated these swans had a widespread breeding and wintering range. However, for various reasons trumpeter swans breeding in the southern portions of their breeding range were extirpated, except for non-migratory remnant family groups in the high mountain valleys in the Greater Yellowstone Region of Idaho, Wyoming, and Montana; and a small migratory group that wintered with them and nested near Grande Prairie, Alberta. A breeding population of trumpeters existed in Alaska and probably northern portions of Canada at that time, but its existence was unknown to most conservationists.

Periodic surveys have been completed over most of the trumpeters' range since the late 1960s. In 1984, a draft *North American Management Plan for Trumpeter Swans* was developed cooperatively by federal, state, and provincial wildlife management agencies in the U.S. and Canada. The Plan called for coordinated continental population surveys at 5-year periods for trumpeter swans. While the continental plan was never fully adopted, the survey has been conducted on schedule. This report documents the results of the second survey with coverage including all known breeding areas and captive-held locations.

For management purposes trumpeter swans are assigned to various populations, and given designations as subpopulations and flocks within populations. These population designations are based upon breeding and wintering ground distributions and migrational tendencies not genetic differences. These are the Pacific Coast (PCP), Rocky Mountain (RMP), and Interior (IP) populations. The breeding range of PCP swans includes Alaska and small portions of Yukon Territory and northwestern

British Columbia. PCP swans winter on a few lakes in interior British Columbia and in estuaries and agricultural fields along the coast of British Columbia, Washington, and Oregon. The RMP population includes the Tri-state and Interior Canada subpopulations. The Tri-state subpopulation is essentially non-migratory and lives throughout the year in the Yellowstone region of Idaho, Montana, and Wyoming. The Interior Canada subpopulation breeds mainly in west-central Alberta but, also, in southeastern Yukon Territory, southwestern Northwest Territories, northeastern British Columbia, and southwestern Saskatchewan. Interior Canada swans winter in the Tri-state region with swans from this subpopulation. Swans from the restoration flocks in the vicinities of Turnbull National Wildlife Refuge (NWR) in Washington, Malheur NWR in Oregon, and Ruby Lake NWR in Nevada were established from swans translocated from the Tri-state subpopulation. In previous survey reports these swans were reported in the PCP total; however, since these flocks originate from Tri-state stock and display the same non-migratory tendency, their numbers are included in the Tri-state counts. Previous totals were also adjusted to reflect this change. Translocations initiated since this survey was completed have significantly expanded the range of RMP swans. IP swans represent various restoration attempts east of the Rocky Mountains and are from several different stocks. IP birds are located in the Lacreek region of South Dakota, Wyoming, and Nebraska; and in several experimental flocks in the Mississippi Flyway (Minnesota, Wisconsin, Michigan, Missouri, and Ontario). Figure 1 delineates the primary breeding ranges of these populations, subpopulations, and flocks.

## Methods

Survey methods varied widely. Generally, aerial-cruise surveys were conducted over known or suspected swan breeding habitat from fixed-wing aircraft during the late summer and fall of 1990 (primarily September). In other locations, ground counts and routine monitoring efforts included searching known release sites, refuges, and other habitats for presence of swans. Time expended in each survey effort were recorded to quantify the amount of effort for future comparisons. Field observations of swan locations were mapped and recorded for future use. Survey counting procedures included categorizing swans into groups by age (either adults/subadults or cygnets) and reproductive status (with or without cygnets). An inventory of captive-held swans was conducted by mailing a questionnaire to holders of Federal Migratory Bird Possession Permits and other known swan propagators. Follow-up phone calls were placed to non-respondents.

## Results

Swan counts in 1990 are summarized by population and subpopulation and flocks in Table 1. Approximately 16,590 swans were tallied during the survey. Increases in the PCP, Interior Canada subpopulation, and captive-held flock were noted in comparison to results of the 1985 survey. The PCP increased 42% to 13,456 from the 1985 count of 9,459. The Interior Canada subpopulation of the RMP

Table 1. Results of 1990 North American Trumpeter Swan Population Inventory by population, subpopulation, and area.

POPULATION BY AREA	ADULTS & SUBADULTS	CYGNETS	TOTAL SWANS	PERCENT CYGNETS	NUMBER OF BROODS	SURVEY METHOD	SURVEY HOURS
<b>Pacific Coast</b>							
Alaska	9742	3595	13337	27	1125	Plane	600 hrs
Yukon	75	44	119	59	12	Plane	12 hrs
<b>Population Total</b>	<b>9817</b>	<b>3639</b>	<b>13456</b>	<b>27</b>	<b>1137</b>		
<b>Rocky Mountain</b>							
<i>Interior Canada</i>							
Yukon	136	30	166	18	12	Plane	83.7 hrs
Northwest	124	64	188	34	33		
British Columbia	190	104	294	35	28		
Alberta	306	160	466	34	49		
Saskatchewan	2	1	3	33	0		
<b>Subpopulation Total</b>	<b>758</b>	<b>359</b>	<b>1117</b>	<b>32</b>	<b>122</b>		
<i>Tristate</i>							
Montana	245	108	353	31	34	Plane	37.7 hrs
Idaho	102	28	130	22	10		
Wyoming	95	11	106	10	5		
<b>Subpopulation Total</b>	<b>442</b>	<b>147</b>	<b>589</b>	<b>25</b>	<b>49</b>		
<i>Refuge Restoration Flocks</i>							
Turnbull NWR	3	0	3	0	0	monitoring	
Malheur NWR	19	7	26	27	2	Plane	?
Ruby Lake NWR	8	4	12	33	2	Plane	?
<b>Subpopulation Total</b>	<b>30</b>	<b>11</b>	<b>41</b>	<b>27</b>	<b>4</b>		
<b>Population Total</b>	<b>1230</b>	<b>517</b>	<b>1747</b>	<b>30</b>	<b>175</b>		
<b>Interior (Restoration Flocks)</b>							
<i>Lacreek</i>							
South Dakota	46	14	60	23	7	Plane	22.3 hrs
Nebraska	73	43	116	37	12		
Wyoming	4	5	9	56	1		
<b>Subpopulation Total</b>	<b>123</b>	<b>62</b>	<b>185</b>	<b>34</b>	<b>20</b>		
<i>Mississippi Flyway</i>							
Minnesota	123	29	152	19	12	Plane/ground	2 hrs/ 4 hrs
Michigan	9	0	9	0	0	ground	16 hrs
Wisconsin	24	34	58	59	2	monitoring	
Missouri	6	0	6	0	0	monitoring	
Ontario	12	0	12	0	2		
<b>Subpopulation Total</b>	<b>174</b>	<b>63</b>	<b>237</b>	<b>27</b>	<b>16</b>		
<b>Population Total</b>	<b>297</b>	<b>125</b>	<b>422</b>	<b>30</b>	<b>36</b>		
<b>Free-flying Total</b>	<b>11344</b>	<b>4281</b>	<b>15625</b>	<b>27</b>	<b>1348</b>		
<b>Captive Total</b>	<b>651</b>	<b>160</b>	<b>965*</b>	<b>17</b>			
<b>GRAND TOTAL</b>	<b>11995</b>	<b>4441</b>	<b>16590</b>	<b>27</b>			

\*includes 154 swans to be released

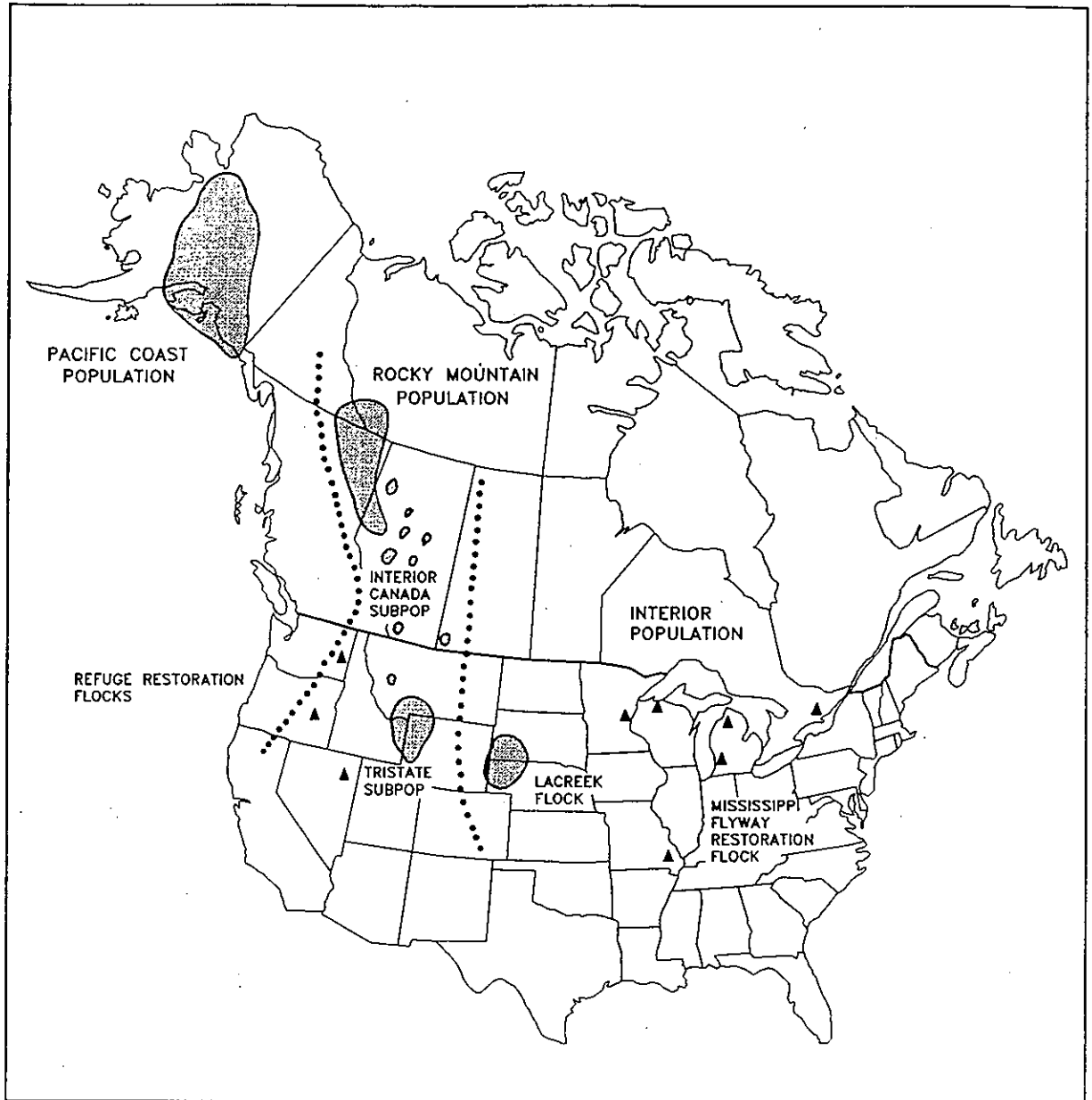


Fig. 1. North American breeding range of trumpeter swans by management population.

increased 85% to 1,117 from 604 in 1985. Numbers of captive-held swans increased from 551 to 965 (including 154 to be released) over the 5-year period (Appendix 4).

Long-term trends in swan populations are shown in Figure 2. The Pacific Coast Population has increased from 2,847 to 13,456 (+373%) since surveys began in 1968 (Table 2). The Tri-state subpopulation declined from 585 in 1968 to 485 in 1980, but has since increased to 589. The Interior Canada subpopulation increased from 122 in 1968 and has reached a high of 1,117 (+851%). Swans in the refuge restoration flocks declined to 41 in 1990 from a high count of 131 in 1975 (-67%). Appendices 1-3 contain detailed counts by specific management units.

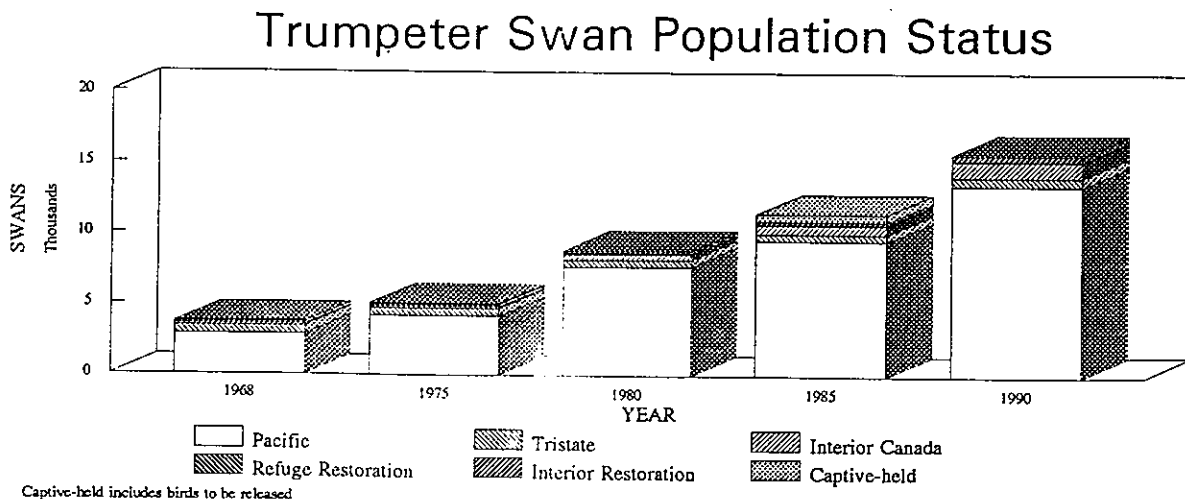
## Discussion

Some unknown portion of these increases are due to increases in survey effort within previously known breeding areas; however, examination of swan observation locations indicates that trumpeters now occupy new breeding areas. Trumpeter swans nesting in Alaska, Alberta, Yukon and Northwest Territories appear to be expanding their breeding range.

**Table 2. NORTH AMERICA TRUMETER SWAN POPULATION INVENTORY**

<u>Year</u>	<u>Pacific</u>	<u>Rocky Mountain Population</u>			<u>Interior</u>	<u>Captive</u>
		Tri-state	Int. Canada	Restoration		
1968	2847	585	122	120	64	+
1975	4170	537	131	131	116	+
1980	7696	485	379	111	176	+
1985	9504	507	604	74	209	551
1990	13456	632	1117	43	422	965*

\* includes 154 swans to be released



**Fig. 2.** Long-term trends in management populations of trumpeter swans.

## Acknowledgements

Historical information was compiled from previous survey reports. Special thanks are due to the many private, state, and federal personnel in the U.S. and Canada for coordinating and conducting the field surveys. Although too numerous to mention, the survey participants deserve all of the credit for conducting this survey. B. Conant, R.W. McKelvey, L. Shandruk, D. Compton, R. Kraft, C. Mitchell, R. Bauer, J. Cornely, and S. Lewis deserve particular recognition for coordinating the survey efforts over significant portions of the trumpeters swans' range.

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Appendix 1. Pacific Coast Population of Trumpeter Swans.

Location	Year	Adults	Cygnets	Total	% Cygnets	Broods
Alaska	1990	9742	3595	13337	27	1125
	1985	7773	1686	9459	18	588
	1980	5259	2437	7696	32	683
	1975	2993	1177	4170	28	378
	1968	1924	923	2847	32	257
Yukon Territory	1990	75	44	119	37	12
	1985	32	2	34	6	1
British Columbia	1990	?	?	0	?	?
	1985	7	4	11	36	1
PCP Total	1990	9817	3639	13456	27	1137
	1985	7812	1692	9504	18	590
	1980	5259	2437	7696	32	683
	1975	2993	1177	4170	28	378
	1968	1924	923	2847	32	1395



Appendix 2. Rocky Mountain Population of Trumpeter Swans.

Location	Year	Adults	Cygnets	Total	% Cygnets	Broods
<b>Interior Canada Subpopulation</b>						
Yukon Territory	1990	136	30	166	18	12
	1985	87	20	107	19	8
	1978-82	68	26	94	28	10
MacKenzie District	1990	124	64	188	34	12
	1985	51	24	75	32	7
	1980	26	5	31	16	1
British Columbia	1990	190	104	294	35	28
	1985	59	27	86	31	11
	1978-81	44	0	44	0	0
Alberta	1990	306	160	466	34	49
	1985	228	112	340	33	28
	1980	138	72	210	34	23
	1975	84	37	121	31	12
	1968	75	31	106	29	11
Saskatchewan	1990	2	1	3	33	0
	1985	4	2	6	33	1
	1980	7	7	7	7	7
	1974	4	6	10	60	2
	1971	7	9	16	56	3
<b>Tri-state Subpopulation</b>						
Montana	1990	245	108	353	31	34
	1985	212	87	299	29	27
	1980	315	6	321	2	5
	1974	296	49	345	14	17
	1968	242	123	365	34	42
Wyoming	1990	95	11	106	10	5
	1985	73	25	98	26	6
	1980	74	6	80	8	4
	1974	90	14	104	13	7
	1968	101	25	126	20	11
Idaho	1990	102	28	130	22	10
	1985	83	27	110	25	12
	1980	73	11	84	13	6
	1975	71	17	88	19	5
	1968	88	6	94	6	5
<b>Refuge Restoration Flocks</b>						
Turnbull NWR	1990	3	0	3	0	0
	1985	9	1	10	10	1
	1980	4	0	4	0	0
	1975	27	14	41	34	4
	1968	39	1	40	3	1
Malheur NWR	1990	19	7	26	27	2
	1985	36	2	38	5	2
	1980	38	19	57	33	8
	1975	45	7	52	13	3
	1968	40	11	51	22	5
Ruby Valley-NV	1990	8	4	12	33	2
	1985	23	3	26	12	1
	1980	35	15	50	30	
	1975	36	2	38	5	
	1968	20	9	29	31	3
RMP Total	1990	1230	517	1747	30	154
	1985	865	330	1195	28	104
	1980	815	160	975	16	57
	1975	653	146	799	18	50
	1968	530	175	705	25	78

Appendix 3. Interior Population of Trumpeter Swans restored to Central and Miss. Flyways

Location	year	Adults	Cygnets	Total	% Cygnets	Broods
<b>Lacreek Restoration Flock</b>						
South Dakota	1990	46	14	60	23	7
	1985	42	33	75	44	12
	1980	55	22	77	29	10
Nebraska	1990	73	43	116	37	12
	1985	53	30	83	36	10
	1980	65	22	87	25	8
South Dakota and Nebraska (combined)	1975	81	35	116	30	?
	1968	43	21	64	33	?
Wyoming	1990	4	5	9	56	1
<b>Lacreek Restoration Flock Total</b>						
	1990	123	62	185	34	20
	1985	95	63	158	40	22
	1980	120	44	164	27	18
	1975	81	35	116	30	?
	1968	43	21	64	33	?
<b>Mississippi Flyway Restoration Flock</b>						
Minnesota	1990	123	29	152	19	12
	1985	37	7	44	16	3
	1980	12	0	12	0	0
Ontario	1990	12	0	12	0	?
	1985	3	0	3	0	0
Missouri	1990	6	0	6	0	0
	1985	4	0	4	0	0
Michigan	1990	9	0	9	0	0
Wisconsin	1990	24	34	58	59	2
<b>Mississippi Restoration Flock Total</b>						
	1990	174	63	237	27	14
	1985	44	7	51	14	3
	1980	12	0	12	0	0
<b>Interior Population Total</b>						
	1990	297	125	422	30	34
	1985	139	70	209	33	25
	1980	132	44	176	25	18
	1975	81	35	116	30	?
	1968	43	21	64	33	?

Appendix 4. Captive held Trumpeter swans 1990.

Location	Adults	Young	For Release
<b>United States</b>			
Alaska	7	1	
Alabama	23	0	
Arkansas	0	4	
California	24	0	
Connecticut	4	4	
Delaware	3	0	
District of Columbia	2	0	
Florida	7	0	
Idaho	4	1	
Illinois	27	3	
Indiana	11	4	
Iowa	18	8	
Kansas	8	0	
Louisiana	7	0	
Maryland	12	0	
Massachusetts	3	0	
Michigan	41	11	71
Minnesota	64	3	34
Mississippi	6	0	
Missouri	15	0	
Montana	27	20	
Nebraska	1	5	
New Hampshire	2	4	
New York	22	1	
North Carolina	12	0	
Ohio	37	11	
Oklahoma	6	0	
Oregon	2	0	
Pennsylvania	18	13	
Rhode Island	3	0	
South Dakota	0	3	
Tennessee	6	0	
Texas	7	0	
Utah	12	2	
Vermont	7	3	
Virginia	8	1	
Washington	31	6	3
Wisconsin	48	16	40
Wyoming	7	7	
Total	542	131	148
<b>Canada</b>			
Alberta	22	10	
British Columbia	2	0	
Manitoba	3	2	
Nova Scotia	3	0	
Ontario	66	17	6
Quebec	4	0	
Total	100	29	6
France	1	0	
Germany	2	0	
Unknown	6	0	
Total	9	0	
Total Captive- Held Swans	651	160	154
Grand Total			